



PATENT
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(Formerly 1757.0260001)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ronald J. VIDAL et al.	
Application No.: 09/988,821	Examiner: Michael SAFAVI
Filed: November 20, 2001	Art Unit: 3673
For: CABLE INSTALLATION	Confirmation No.: 8685

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APPEAL BRIEF IN SUPPORT OF APPELLANT'S APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Sir:

Applicant (hereafter "Appellant") hereby submits this Brief in triplicate in support of its appeal from a decision by the Examiner, mailed March 23, 2004, in the above-referenced application. Appellant respectfully requests consideration of this Appeal by the Board of Patent Appeals and Interferences (the "Board") for allowance of the above-captioned patent application. An oral hearing is not desired.

Appellant files a notice of appeal for the present application herewith. The present application includes claims that have now been twice rejected by the Examiner. Therefore, this is a proper Appeal and Appellant's Brief in support of this Appeal follows.

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REAL PARTY IN INTEREST

The real party in interest in this Appeal is Level 3 Communications, Inc., the assignee of all rights to the invention disclosed in the present application. The assignment of the inventors' rights to LEVEL 3 COMMUNICATIONS, INC. was recorded in the United States Patent and Trademark Office on June 12, 2002, at Reel 012988, Frame 0316.

RELATED APPEALS AND INTERFERENCES

There are no known appeals or interferences related to this Appeal.

STATUS OF CLAIMS

Claims 1-26 are currently pending in the above-referenced application (see Appendix). Claims 1-21 are as originally filed with the exception of minor typographical defects previously corrected in claims 2, 3, 7, 17, 18 and 20 through Appellant's Amendment of 12/30/2003 ("Appellant's Prior Amendment"). Claims 22-26 were added in that same amendment.

In the second Office Action mailed March 23, 2004 (the "Second Office Action"), the Examiner (1) rejected claims 1-10 and 13-26 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,164,872 ("Morishige") in view of U.S. Patent No. 5,722,793 ("Peterson"), and (2) rejected claims 1-26 under 35 U.S.C. §103(a) over Peterson in view of Morishige. Claims 1-26 as set forth in the Amendment and Response to Office Action mailed March 23, 2004, are the subject of this Appeal.

STATUS OF AMENDMENTS

No amendment has been filed subsequent to the Examiner's Second Office Action which rejected claims 1-26. A copy of all claims on appeal is attached hereto in the Appendix of Claims.

SUMMARY OF INVENTION

The systems and methods disclosed in the present application generally relate to the installation of cables over an extended span. In particular, the systems and methods disclosed in the present application provide for terminating a cable in a desired location without incurring the technical, legal and/or cost challenges incurred in terminating a cable at or near a particular destination. As just one specific example, the present invention can be applied to installing a transcontinental cable. Prior to the present invention, a cable was typically installed from a location on one continent to a location on another continent, and involved incurring substantial expenses in bringing the cable onshore at the continental termination points. These substantial expenses can include, for example, fees for the right of way to install the cable both onshore and near the shore.

In stark contrast, the present invention addresses this problem by bringing a plurality of ducts onshore at a desired location and making the plurality of ducts accessible at an offshore terminal. The costs of bringing a cable from one continent to this offshore location are less than bringing the cable from the continent directly to another continent. The cable is then brought from the offshore terminal to the destination continent via the previously installed plurality of ducts. The costs and problems associated with bringing the cable from the offshore terminal to the destination continent via the previously installed plurality of ducts are negligible compared to bringing the cable directly onshore.

Thus, as applied to the aforementioned specific example, the systems and methods of the present invention can be utilized to allow the addition of new point-to-point cable connections “without the need to repeat the underwater laying process in the vicinity of the shore” where significant disruption of cable occurs from fishing, dredging and other shipping activities, and

where laying cable is often highly regulated. Application at ¶ 9; see also, Id. at ¶¶ 11-12. Such an offshore termination point fed by a plurality of ducts extending to the first point can, for example, “significantly reduce the overall technical effort required to provide a subsequent long distance cable link”. Id. at ¶11. This is at least in part because “[a] large amount of construction work is required in landing a cable, and, in the case of coastal installations, permits are required to land a cable and new cables must often be laid in place of old in the same route.” Id. Thus, “for example in a case of a cable crossing of many hundreds or even thousands of kilometers, provision of multiple ducting over a relatively small proportion of the distance can potentially significantly reduce expense and complication of subsequent cable installation operations.” Id. at ¶12. Use of an offshore termination point further allows for installing subsequent cables without necessarily requiring multiple ducts across the entire span of the connection. Id. at ¶7.

ISSUES

1. Whether claims 1-10 and 13-26 are unpatentable under 35 U.S.C. §103(a) over Morishige in view of Peterson; and
2. Whether claims 1-26 are unpatentable under 35 U.S.C. §103(a) over Peterson in view of Morishige.

GROUPING OF CLAIMS

For the purposes of this appeal the following claim groupings apply:

- GROUP I: 1 - 11, 16 – 21 and 23
- GROUP II: 22 and 25 - 26
- GROUP III: 12

**ARGUMENT -- THE EXAMINER HAS UTTERLY FAILED TO MAKE A *PRIMA FACIE* CASE OF
OBVIOUSNESS**

“To reject claims in an application under section 103, an examiner must show an unrebutted *prima facie* case of obviousness.” *In re Rouffet*, 149 F.3d 1350, 47 U.S.P.Q.2d 1453 (Fed. Cir. 1998) *citing In re Deuel*, 51 F.3d 1552, 1557, 34 U.S.P.Q.2d 1210, 1214 (Fed. Cir. 1995). To make a *prima facie* case of obviousness based on more than one reference, an examiner must , among other things, establish “some suggestion or motivation . . . to modify the reference or combine reference teachings”, and that the cited references “teach or suggest all of the claim limitations.” MPEP at 2143. In this case, the Examiner has utterly failed on both counts. Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness as to either the claims of GROUP I, GROUP II or GROUP III and the claims should be allowed, with such being respectfully requested herein.

A. Morishige And Peterson Are Not Properly Combinable In Any Way That Renders Appellant’s Claims Unpatentable.

Rather than establishing motivation to combine as required, the Examiner merely argues that the combination is “rational” as the teachings of one reference “can readily be applied” to the other. Second Office Action at p. 5. This statement finds no merit in either the law or the cited references.

First, it is not sufficient to find that the teachings “can be applied”. MPEP at 2143.01 (“The mere fact that references can be combined or modified does not render the resultant combination obvious. . .”); *see also, In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990)(although the prior art device “may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.”).

Rather, to properly combine the teachings of Morishige and Peterson, the Examiner must identify something either implicitly or explicitly provided in the cited references, or knowledge generally available to one of ordinary skill in the art that would motivate that person to combine the disclosure of an automobile tunnel disposed above the surface of the seabed (Morishige) with the disclosure of a device for burying communication cable under the seabed (Peterson). The Examiner has twice failed to establish such a suggestion or motivation, and indeed, it is not possible to do such. At least because of this, the rejections should be reversed and the claims in GROUP I, GROUP II and GROUP III should be allowed.

Second, the lack of motivation to combine the references is accentuated by the fact that the principle of operation of either of the cited references is wholly changed where the references are combined. Of course, where the proposed modification or combination changes the principle of operation of the prior art, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. MPEP §2143.01 (“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious”). Here the rejection proposes combining an underwater automobile tunnel of Morishige with a method for burying communication cable of Peterson. The combination would require mounting massive cylinders, in some inconceivable manner, on a remote controlled and self-propelled sea plough for burying in the sea bed. This flies in the face of both references, as well as reason. First, the purpose of Morishige is to provide a method of manufacturing cylindrical sections at sea because they are too large to build on land (twenty meters in diameter by three hundred meters in length). See e.g., Morishige at abstract; col. 27, l. 60 – col. 28, l. 13. Thus, the combination requiring that the sections be mounted on an initially land based sea plough as

taught by Peterson completely changes the principle of Morishige. Second, Peterson provides a method for burying flexible conduit in the seabed using a self propelled remote controlled sea plough. See e.g., Peterson at abstract. The conduit must be flexible to facilitate being carried by the sea plough and unrolled onto the sea bed. Replacing the flexible conduit with the massive inflexible cylinders of Morishige not only changes the principle of Peterson, but actually renders Peterson completely inoperable. Thus, for at least this additional reason the rejections should be reversed and the claims in GROUP I, GROUP II and GROUP III should be allowed.

Third, one of ordinary skill in the art would not look to a method for constructing an underwater automobile tunnel (i.e., Morishige) for insight in how to provision a point-to-point cable connection. Said another way, the construction of automobile tunnels is neither in the field of endeavor as set forth in Appellant's claims, nor disclosure teaching installation of massive cylinders on the seabed pertinent to the particular problem with which applicants are concerned. MPEP § 2141.01(a); *see also, In re Clay*, 966 F.2d 656, 23 U.S.P.Q.2d 1058 (Fed. Cir. 1992) ("A reference is reasonably pertinent if . . . [it] logically would have commended itself to an inventor's attention in considering his problem."). Again, for at least this additional reason the rejection should be reversed and the claims in GROUP I, GROUP II and GROUP III should be allowed.

B. Morishige and Peterson Fail to Teach the Limitations of Appellant's Claims

Even if the cited references were properly combinable (which they are not), the Examiner has still failed to make a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art. MPEP 2143.03 *citing In re Wilson*, 424 F.2d 1382 (CCPA 1970) ("All words in a claim must be

considered in judging the patentability of that claim against the prior art.”). Rather than providing an analysis that identifies a teaching or suggestion of ALL of the claim limitations, the Examiner provides only a cursory rejection that fails to address various of the claim limitations. See e.g., *Second Office Action* at pp. 2-4. Of course, such an approach fails to satisfy the Examiner’s burden of making a *prima facie* case of obviousness. Indeed, careful consideration of the cited art reveals that the elements of the claims at issue are not taught, disclosed or suggested. For at least this additional reason the rejections should be reversed and the claims at issue allowed.

The Examiner’s rejections are traversed with respect to independent claims 1, 16 and 25, as well as dependent claim 12. Claim 1 provides a method of facilitating provision of a point-to-point cable connection between first and second points separated by a span of water. The method includes, *inter alia*, providing a *plurality of ducts from the first point* through a first relatively shallow region to an *offshore termination point*. A cable is placed in one of the plurality of ducts coupling the first point to the offshore termination point. One or more cables coupling the offshore termination point to one or more locations remote from the first point are available at the offshore termination point. One of the remote locations is the second point, and the cable stretching from the first point to the offshore termination point is connected to the cable stretching from the offshore termination point to the second point.

Thus, as set forth in claim 1, a *plurality of ducts* are provided from a *first location* to an *offshore termination point* where a cable from the first point can be connected to one of a number of cables extending from the offshore termination point to various end points. Such a configuration provides for one or more advantages including, for example, allowing for the addition of new point-to-point cable connections “without the need to repeat the underwater

laying process in the vicinity of the shore” where significant disruption of cable occurs from fishing, dredging and other shipping activities, and where laying cable is often highly regulated.

Application at ¶ 9 (emphasis added); see also, Id. at ¶ 11.

Such an offshore termination point fed by a plurality of ducts extending to the first point can, for example, “significantly reduce the overall technical effort required to provide a subsequent long distance cable link”. Id. at ¶11. This is at least in part because “[a] large amount of construction work is required in landing a cable, and, in the case of coastal installations, permits are required to land a cable and new cables must often be laid in place of old in the same route.” Id. Thus, “for example in a case of a cable crossing of many hundreds or even thousands of kilometers, provision of multiple ducting over a relatively small proportion of the distance can potentially significantly reduce expense and complication of subsequent cable installation operations.” Id. at ¶12. Use of an offshore termination point further allows for installing subsequent cables without necessarily requiring multiple ducts across the entire span of the connection. Id. at ¶7.

In stark contrast to claim 1, Morishige discloses a method for manufacturing large cylindrical sections that can be used in relation to constructing an underwater automobile tunnel. The method comprises constructing a number of cylindrical tubes of sufficient diameter (i.e. twenty meters) to allow the passage of multiple automobiles and trains there through. See e.g., Morishige at Figs. 40-44; see also, col. 27, l. 60 – col. 31, l. 9. In turn, each of these cylindrical tubes is lowered to the seabed where they rest on “seabed foundations”, and are attached one to another to create a continuous tunnel passing from one land mass to another. See e.g., Morishige at Fig. 38.

Morishige fails to disclose, teach or suggest an *offshore termination point* as provided in claim 1. Rather, Morishige teaches a tunnel stretching from a single entrance point (the left of Fig. 38) to a single destination point (the right of Fig. 38). There is simply no discussion of a point within the tunnel where two or more cables would be connected. Further, there is no discussion why such a point would be desirable. The rejection simply asserts that such a point can be anywhere “at or along 6013 or any point of 6002 extending along the seabed, as well as from another onshore second point to an or the same offshore point.” Office Action of 7/30/03 at p. 4. However, the rejection fails to discuss or even suggest that one or more cables *terminate* at these amorphous points. Without such a suggestion of cable termination at these points, the points cannot be reasonably construed to be the “offshore termination points” set forth in claim 1.

Peterson discloses “a method and device for continuously laying and burying flexible submarine conduit”. Peterson at col. 1, ll. 5-7. The method disclosed in Peterson includes stretching a cable “between two sites on land separated by a stretch of water”, or between on offshore site and a site on land. Id. at col. 2, ll. 16-18; col. 6, l. 66 – col. 7, l. 7. Both approaches include repeating the underwater laying process in the vicinity of the shore, which is one of the problems avoided by using the method of claim 1. In particular, Peterson expressly teaches using a single duct conduit being laid by a remote controlled and self-propelled sea plough beginning “with a first step of laying and burying the cable on land.” Id. at col. 3, l. 67 – col. 4, l. 1. The sea plough continues into the water until it reaches a predetermined point where it is retrieved by a vessel. Peterson at Figs. 4 and 6. Once retrieved, the cable is laid by a cable laying ship as usual.

Similar to Morishige, Peterson fails to disclose, teach or suggest the use of an offshore termination point fed by a plurality of ducts. Hence, Peterson and Morishige either separate or in combination fails to disclose teach or suggest each element of claim 1. Accordingly, applicants respectfully request withdrawal of the rejection, and allowance of claim 1 for at least the aforementioned reason. Further, claims 2-15 properly depend from allowable independent claim 1, and are thus also allowable for at least this reason.

Also, independent claim 16 includes an offshore termination point similar to that discussed in relation to claim 1 above. Accordingly, independent claim 16 is allowable for at least the aforementioned reasons. Claims 17-21 properly depend from allowable claim 16, and are thus also allowable for at least this reason. Accordingly, all of the claims of GROUP I and GROUP III should be allowed for at least the aforementioned reasons.

Claims 22 and 25 – 26 are allowable for reasons similar to those discussed above, and additionally provide for connecting cables emerging from a plurality of ducts at a termination point. This provides an ability to connect multiple end points using a plurality of ducts extending from a termination point to at least one of the end points. Such an approach is not even addressed by the Examiner in the Second Office Action, and thus a *prima facie* case has not been established. Hence, for at least this additional reason, the rejections of the GROUP II claims should be reversed and the claims allowed.

Claim 12 provides for utilizing communication equipment at the offshore location. As with the Group II claims, the Examiner has not even addressed such a limitation, and thus a *prima facie* case has not been established. Hence, for at least this additional reason, the rejections of the GROUP III claims should be reversed and the claims allowed.

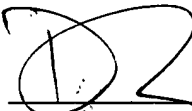
CONCLUSION

For at least the reasons set forth above, the Examiner has not put forth a *prima facie* case for rejecting the claims under 35 U.S.C. §103(a). "In absence of a proper *prima facie* case of obviousness, an applicant who complies with the other statutory requirements is entitled to a patent." *In re Rouffet*, 149 F.3d 1350, 47 U.S.P.Q.2d 1453 (Fed. Cir. 1998) citing *In re Oetiker*, 977 F.2d 1443, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1993). Accordingly, Appellants respectfully request reversal of the Examiner's rejections, and allowance of the claims.

The appropriate fee of \$660.00 for the filing and consideration of the Notice of Appeal and Appeal Brief is enclosed. Should any additional fee be required, the Commissioner is authorized to charge our Deposit Account No. 06-0029 and requested to notify us of same.

Date: May 19, 2004

Respectfully submitted,
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APPENDIX OF CLAIMS
37 C.F.R. § 1.192(c)(9)

The claims on appeal read as follows:

1 1. A method of facilitating provision of a point-to-point cable connection
2 between first and second points separated by an extended span of water including a first region
3 of shallow water and a second region of relatively deep water, the method comprising:

4 providing a plurality of ducts from the first point through the first region of the
5 extended span to an offshore termination point between the first and second points;

6 placing a first cable in one of said plurality of ducts to provide a connection
7 between the first point and said offshore termination point;

8 receiving at said offshore termination point, a second cable from the second point;
9 and

10 connecting said first cable to said second cable at said offshore termination point
11 to create the point-to-point cable connection.

1 2. The method of claim 1, wherein said first point is onshore and said
2 providing step comprises:

3 providing said plurality of ducts from the first point through the first region of the
4 extended span to said offshore termination point between the first and second points, wherein
5 said offshore termination point is at a distance of at least 2 kilometers from the first point.

1 3. The method of claim 1, wherein said first point is onshore and wherein
2 said providing step comprises:

3 providing said plurality of ducts from the first point through the first region of the
4 extended span to said offshore termination point between the first and second points, wherein
5 said offshore termination point is at a distance of about 10 to 20 kilometers from the first point.

1 4. The method of claim 1, wherein said first point is onshore and wherein
2 said providing step comprises:

3 providing said plurality of ducts from the first point through the first region of the
4 extended span to said offshore termination point between the first and second points, wherein
5 said offshore termination point is adjacent to a transition between the first and second regions.

1 5. The method of claim 4, wherein said first region is a Continental Shelf.

1 6. The method of claim 5, wherein said offshore termination point is
2 positioned in water having a depth of less than about 200m.

1 7. The method of claim 1, wherein
2 said placing step comprises placing the first cable in one of said plurality of ducts
3 to provide a connection between the first point and said offshore termination point, wherein said
4 cable is a relatively thin, lightweight cable; and

5 said receiving step comprises receiving at said offshore termination point, a
6 second cable from the second point, wherein said second cable is an armored cable.

1 8. The method of claim 1, further comprising a step of:
2 burying said plurality of ducts in the seabed.

1 9. The method of claim 8, further comprising the step of:
2 burying said plurality of ducts in the seabed at a burial depth that decreases as a
3 function of distance from said first point such that said plurality of ducts are buried deeper near
4 said first point.

1 10. The method of claim 9, wherein said first point is onshore, adjacent a
2 shoreline.

1 11. The method of claim 1, wherein said providing step comprises:

2 providing said plurality of ducts from the first point through the first region of the
3 extended span to said offshore termination point between the first and second points, wherein
4 said offshore termination point is and offshore platform.

1 12. The method of claim 11, wherein said providing step further comprises:
2 providing communication equipment on said offshore platform to receive and
3 transmit signals via said first and second cables.

1 13. The method of claim 1, further comprising the step of:
2 providing a plurality of spaced apart cable exits in the region of the offshore
3 termination point.

1 14. The method of claim 13, wherein said step of providing a plurality of
2 spaced apart cable exits comprises:

3 providing said plurality of spaced apart cable exits in the region of the offshore
4 termination point, wherein said spaced apart cable exits are preferably spaced apart by at least
5 50m.

1 15. The method of claim 13, further comprising the step of:
2 branching each of said plurality of ducts so that each duct leads to a
3 corresponding cable exit.

1 16. The system for facilitating provision of a point-to-point cable connection
2 between first and second points separated by an extended span of water including a first region
3 of shallow water and a second region of relatively deep water, comprising:

4 an offshore termination point located between the first and second points, for
5 receiving at least one first cable from the first point and at least one second cable from the
6 second point and providing signal communication between the first point and the second point;
7 and

8 a plurality of ducts extending from the first point through the first region of the
9 extended span to said offshore termination point, each of said ducts being configured to receive
10 at least one first cable.

1 17. The system of claim 16, wherein said offshore termination point is at a
2 distance of at least 2 kilometers from the first point.

1 18. The system of claim 16, wherein said offshore termination point is at a
2 distance of about 10 to 20 kilometers from the first point.

1 19. The system of claim 16, wherein said offshore termination point is
2 adjacent a transition between the first and second regions.

1 20. The system of claim 19, wherein said first region is a Continental Shelf.

1 21. The system of claim 16, further comprising:

2 a first cable extending through one of said plurality of ducts to provide a
3 connection between the first point and said offshore termination point; and

4 a second cable extending from the second point to said offshore termination point.

1 22. The method of claim 1, the method further comprising the step of:

2 placing a third cable in one of the said plurality of ducts to provide another
3 connection between the first point and said offshore termination point;

4 receiving at said termination point, a fourth cable extending from a third point;
5 and connecting said third cable and said fourth cable at said offshore termination point, wherein
6 a point-to-point cable connection is made from the first point to the third point.

1 23. The method of claim 1, wherein the second cable is received at the
2 offshore termination point as a single point-to-point cable unassociated with a plurality of ducts.

1 24. The method of claim 1, wherein the plurality of ducts includes an outer
2 duct having a plurality of sub-ducts defined therein.

1 25. A multi-point cable connection system, the system comprising:
2 a termination point located at a first location, wherein the termination point
3 includes a first cable end associated with a first cable that extends from the termination point to a
4 second location, and a second cable end associated with a second cable that extends from the
5 termination point to a third location;

6 a plurality of ducts extending from a fourth location to the termination point,
7 wherein a third cable end emerges from one of the plurality of cable ducts, and wherein a fourth
8 cable end emerges from another of the plurality of cable ducts; and

9 wherein the third cable end is connected to the first cable end at the termination
10 point, and wherein the fourth cable end is connected to the second cable end at the termination
11 point.

1 26. The system of claim 25, wherein the first cable end and the second cable
2 end are associated with single point-to-point cables each unassociated with a plurality of ducts.